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ABSTRACT

A correlational study was conducted using ACT (American College Test) sub-test scores and actual grades earned in corresponding subject areas in order to determine if the ACT was an effective predictor for student's grades at Southern West Virginia Community College (SWVCC). Study subjects were all students (n= 241) who had ACT test scores on file and who were enrolled at SWVCC. Correlational analyses yielded coefficients of such low magnitude as to conclude that there is no significant relationship between ACT test scores and academic performance at SWVCC. Based on these findings, it was recommended that use of the ACT be discontinued and that a more suitable instrument such as the College Qualifying Test or the Comparative Guidance and Placement Test, both of which have been developed for and normed on community college students, be used. (Author/JDS)

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THE RELATIONSHIP BETWEEN ACT SUB-TEST SCORES AND GRADES EARNED: A CORRELATIONAL STUDY

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The American College Test (ACT) has been widely used by college admission personnel as an aid in helping to select and place applicants. Because of the diversity in the role and missions of the participating institutions, local norms have been established to make the results more meaningful to the individual college. Local and national norms are reported as percentiles with corresponding standard scores. It is this standard score which is used as the basis for predicting college grades.

Scores for the various sub-tests as wellas the total score, have been used, often in concert with high schoolgrades, to make the best prediction possible as to the probable success of potential students. The acid test of any predictor, obviously, is how nearly that which is predicted matches the actual behavior.

In an attempt to determine if the ACT was an effective predictor for students' grades at Southern West Virginia Community College, in Logan, West Virginia, a correlational study was conducted using ACT sub-test scores and actual grades earned in the corresponding subject areas.

Procedure. Scores for a total of 241 students were used in the analysis. Since the ACT yields four sub-test scores (English, Math, Natural Science, and Social Science), as well as a composite, the following courses were selected as representative of those being predicted:

English: All sections of English Composition I	124
Math: All sections of College Math I	22
Natural Science: All sections of Physical Science I (n=32), Biology I (N=50), Chemistry I (N=5)	87
Social Science: All sections of Western Civilization I	83
total	241

Since the ACT is used for placement and not admissions at SWVCC, many students were enrolled who had not taken the test. Actually, slightly less than 50% of the students in these sections had done so. For the 241 students who had ACT results on file and who had completed the coursework with a letter grade other than W (withdrawal) or I (incomplete), correlations were determined.

No sampling procedures were necessary since all the available data were used.

Results. The correlation analyses yeilded coefficients of such low magnitude as to conclude that there is no significant relationship between ACT scores and academic performance at SWVCC. Table I shows the coefficients found, along with t ratios and corresponding probability levels.

TABLE I

Coefficients of Correlation for

ACT Sub-test Scores and Grades for

Corresponding Academic Grades

Course	r	N	t	p	r^2
English	.0996	124	1.00	.20	.0099
Math	.2627	22	.05	.20	.0700
Natural Science	.3871	83	.01	.20	.1504
Social S-ience	.0108	87	.01	.2[illegible]	.0001

As is indicated in Table I, the probability that the observed correlations differed from zero due to chance factors alone, is greater than 20 times in 100. This is too often to conclude that the variables are related (McNemar, 1968). By squaring the correlation coefficient, the amount of variance in one variable accounted for by the other is determined. It can be seen that not very much of the variance can be attributed to the ACT sub-tests (English., .99%; Math, 7%; Natural Science, .01%; Social Science, 15%).

Discussion. The value of any prediction device is determined by its ability to accurately estimate some criterion behavior. Having access to both prediction and criterion scores allows one to determine the statistical accuracy of the predictor. In the present situation, the ACT is purported to be a "good" predictor of overall grades earned at Southern West Virginia Community College (Fisher, 1973).

In a letter to the admissions office of SWVCC, Mr. Peter Fisher, who was then the Eastern Regional Director for ACT, stated that:

> High school grades in English and the ACT English test score are clearly the best predictors of grades in English 101 and overall grades at your institution (p. 2).

Earlier in that same letter Mr. Fisher stated:

> The large discrepancy between test scores and high school grades indicate (sic) something atypical about the high schools these students attended or about their high school experience (p. 1).

It is difficult to see in light of the obvious contradictions in logic and through an interpretation of the statistical analysis, how it can be concluded that the ACT is a good predictor for students at SWVCC. It appears

that high school grades alone are the best predictors considering the negligible amount of variance accounted for by the ACT scores.

Conclusion. Based on the findings, it is suggested that since the ACT has not been found to be a valid predictor of actual grades earned by students at SWVCC, that this testing program be discontinued.

The need for some sort of assessment tool remains, and it would behoove administrators and counselors at SWVCC to find an instrument more suitable to their needs. Possible replacements include the College Qualifying Test (CQT) published by the Psychological Corporation, or the Comparative Guidance and Placement Test (CGP) published by the College Entrance Examination Board. Both of these instrumnets have been specifically developed for and normed on community college students.

Summary. A correlation study investigated the relationship between scores on a standardized admissions test (ACT) and academic letter grades for introductory courses in English, Math, Natural Science, and Social Science. It was found that the slight deviation from zero was due to chance and therefore no significant relationship exists between the two measures. It was recommended, on the bais of the statistical analysis, that the ACT be discontinued. Sevral alternative testing instruments were offered.

References.

Fisher, P. Personal communication, 1973.

McNemar, Q. Psychological statistics. New york: Wiley, 1968.

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